

Monday February 24, 1958.

Since last December I have occupied myself with "lunar, or cosmic microbiology". During the past several years I wondered whether "ambiguity" should be discounted in discussions of bioprecies & the question of contamination was my first reaction to speculations on a lunar probe since I presented it. I don't think I have ever remarked on this in print.

The determination to start a campaign began when I was in NY <sup>last</sup> ~~this~~ December for the Harvey Lecture & I talked about it at the dinner (e.g. T. H. C. H.) and later Ed Tatum. There has been a very sudden growth of interest and serious reaction to space projects, much more so than ~~Explorer~~ + the beginning of this session of Congress. That the Senate may earnestly set up a space committee was almost the decisive event. The tone of my own memoranda, Q37, revised from time to time, reflects increasing boldness.

Dear Davis visited Madison in January to give a summary to Halverson's group. At a party at Hal's that P. M. he mentioned he had proposed a <sup>10 day</sup> roentgen experiment to trap cosmic dust 1/5 tools for amino acid, & had been refused. I brought up my own concern "Q37" & it became apparent that the mass afforded an efficiency factor  $\sim 10^{12} - 10^{14}$  ( $3 \times 10^9$  years =  $10^{12}$  days) compared to a roentgen sample. He argued pushing the "political" side & agreed to visit Madison again if asked. He is arriving this noon. Proposal: to write an article for Science.

The following political developments meanwhile:

- ① I had written to Brink c/ Q37 in December. No reply (still!).
- ② " " to Toddard. He indicated the NBS section was influential. ~~But~~ I asked him to circulate the memo anywhere.
- ③ Before was no help - he misdirected me to William Hagen
- ④ Consolazio was most useful & I followed his suggestions (exp. Belaner).
- ⑤ Mainly as Consolazio's advice I ~~want~~ wrote directly to NBS Comint. This must two weeks ago; I have had no formal reply. I called Farmington Farms who said the matter was discussed. He was hazy on the details. It may have been referred to a NBS Comint subcommittee or to an NRC "space" Committee of which I have only just heard.

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## Science

Verner Suomi brought up the Teller effect when talked with Leibnitz to ask his opinion of the temperature of space in space.

The astrophysics of these particles has to be studied carefully; soon more experiments can be done: e.g. biological inactivation might be used to measure temperature of ~~so~~ irradiated samples in vacuo. In any case we have to evaluate total spectra.

For past couple of weeks I have been reading to improve background.

Books: Dufay - Galactic nebulae + interstellar matter

Urey - Planets. Keppler ed. - planetary atmospheres

Carter - realities of space travel. J. A. R.; Jet Propulsion;

Negishi - spontaneous org. Oparis - I (Review); also III?

Whipple - E. M + Planets Watson - Returns the planets

Barnard - Star of the moon Saengerius - Disc of the Universe (history)

Reading Dufay last Thursday was absolutely staggered by his part III. I had known vaguely that much of the matter of the universe was in disperse ~~as~~ atoms + small particles. I did not then realize the distinction between the cosmic grains ( $C, H_2O, N \dots$ !) and meteors (stone + metallic). In a word, the bulk of the cosmic substance is organic! Furthermore, if reactions like  $C + N \rightarrow CN$  etc. are involving each grain (dimensions  $\sim 3\mu$ ) must be a single polymeric macromolecule in view of the chemical reactivity of isolated atoms + free radicals. Furthermore temperature depends directly on chemical constituents of the grains (viz. a sebaceous mechanism in growth!!! The problem of organic evolution begins in free space + is consistent with elementary principles 3

stellar evolution!!

1 more item added: a mechanism of growth (by fission).

Ned to survey spectra ~~for UV~~ versus infrared of single bonds which might be points of photo-thermal scission !!

March 31. After talking to Cowie in Phila., I decided it best to leave out "fission" of grains as going too far in speculation. So I forgot about this for the time. But reading Spitzer & Bates (Ap. J. 113:44) it became obvious that such a mechanism was an astrophysical necessity!

C. my letter to Spitzer this date (I talked briefly to Whipple about it this AM & a little more Saturday. Though he did the observational work on redlining of spectra he is not too closely involved in the astrophysical details. He is an observational astronomer!) Also read Whipple's papers over which he clarified some confusion on comets vs. asteroids as sources of dust.

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⑥ I got back the most encouraging letter from Lloyd Brubaker.

"Local factors": Great confusion over coordination of satellite programs. Some of civilians vs. military control not settled. So who does make decisions. Important what sort of contact to make to Russians?

⑦ Copies of Q37 to Pennington - enthusiastic reply & referred to Harry Eagle, ditto. He backed it up in letters to NASA. Suggestion of an STB committee - I thought better to concentrate on NASA. But this might be a good idea for info. Back to STB

⑧ Copy of Q37 to H T Cox (STB). Cox was used proposal, in talks with Killian (spine advisor to Pres. Eisenhower). Called me on phone to warn me of news release, which was not, however, put out partly at my request. see ⑩

⑨ Via Vernon Swanson & STB, & other normal channels, I heard of NASA conference to be held in May on Biol appd. Earth satellites. I have written to Eagle from Milwaukee and probably will participate. This is most likely down.

⑩ Jim Loftis, + Mr. Dennis at IP here in Madison got wind of local party via Swanson and called me on the 15th. Disputed the beans (thinking of 8) but covered my tracks on the 14th so there would be no wire story right now. I had to promise a refund if interview recharge. all this is hanging fire.

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Immediate prospects : to consult with Comie.

① Our article for Service? inevitably lead to some publicity.

② The NASA conference. { contacts of <sup>various</sup> <sub>at what stage?</sub> Senate committee?

③ We need more info. on what NASA is doing. Write Gorrell (F. Daniels suggestion)

④ Should we ask for more travel & telephone money? via NIH grant? {

⑤ Bright talk to CIA (Mr. Vanden) in re travel to USSR

not known  
planed  
before  
contact?